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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/602,363

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Shunji Minami

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7590

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EXAMINER

KOLO, BRIAN A

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

1

<b>Office Action Summary</b>	Application No. 10/602,363	Applicant(s) MINAMI ET AL.	
	Examiner Brian Kolo	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 12-15, 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto (US 4553851).

With respect to claim 12, Matsumoto teaches an electronic apparatus (Matsumoto figure 14 elements 2-39) comprising:

a casing (Matsumoto figure 1 element 13):

a display section provided in the casing (Matsumoto figure 14, the display section is taken as the recess formed between elements 10 and 30 including the watch hands and face):

a protection glass of a light transmittance nature mounted on the casing so as to face the display section (Matsumoto figure 14 element 12); and

a solar battery disposed so as to face a peripheral edge of the protection glass (Matsumoto figure 14 element 2).

With respect to claim 13, Matsumoto teaches the electronic apparatus according to claim 12 (see rejection of claim 12 above), wherein the protection glass has a peripheral portion (Matsumoto figure 14 elements 30 and 39) bent substantially at a right angle toward the rear surface side of the protection glass (the glass is bent in the same sense as applicants glass is bent in applicants figures 7-11), and the solar battery is disposed along the peripheral edge of the protection glass (Matsumoto figure 14 element 2 is disposed along the edge of the glass).

With respect to claim 14, Matsumoto teaches the electronic apparatus according to claim 13 (see rejection of claim 13 above), wherein the protection glass is provided with a light reflection member (Matsumoto figure 15 element 30) at the bent portion.

With respect to claim 15, Matsumoto teaches the electronic apparatus according to claim 13 (see rejection of claim 13 above), wherein the solar battery comprises a base member in the form of a ring (Matsumoto figure 5 element 40), and a solar battery element disposed on the base member (Matsumoto figure 5 element 2).

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With respect to claim 17, Matsumoto teaches the electronic apparatus according to claim 13 (see rejection of claim 13 above), wherein the protection glass is formed with a groove (Matsumoto figure 35 element 30c, in this embodiment of Matsumoto's device, the glass has a groove near it's edge and this groove accepts element 2) along the peripheral edge of the protection glass, and the solar battery comprises a cylindrical base member (Matsumoto figure 35 element 2, note element 2 is a solid rectangle in shape. A solid rectangle is a cylinder; see definition of cylinder from [www.dictionary.com](http://www.dictionary.com)) and a solar battery element attached on an inner surface of the cylindrical base member (Matsumoto figure 37 element 89), and wherein the solar battery is disposed within the groove formed in the peripheral edge of the protection glass.

With respect to claim 18, Matsumoto teaches an electronic apparatus (Matsumoto figure 35 elements 2-95) comprising:

- a casing (Matsumoto figure 35 element 94):

- a window section provided to the casing (Matsumoto figure 35 element 30C):

- a display member (Matsumoto figure 35 element 81) of a light transmittance nature (Matsumoto figure 35 element 93 in light of column 10 lines 66-67) provided in the casing so as to face the window section: and

- a solar battery (Matsumoto figure 35 element 2) arranged so as to face a peripheral edge of the display member.

With respect to claim 19, Matsumoto teaches the electronic apparatus according to claim 18 (see rejection of claim 19 above), wherein the solar battery comprises plural bulb-shaped solar battery elements (Matsumoto figure 37 element 2), which are disposed along the peripheral edge of the protection glass (Matsumoto figure 35 element 2 is near the edge of the glass).

With respect to claim 20, Matsumoto teaches the electronic apparatus according to claim 18 (see rejection of claim 18 above), wherein the solar battery comprises a cylindrical base member (Matsumoto figure 35 element 2, note element 2 is a solid rectangle in shape. A solid rectangle is a cylinder; see definition of cylinder from [www.dictionary.com](http://www.dictionary.com)) and a solar battery element attached on an inner surface of the cylindrical base member (Matsumoto figure 37 element 89), and the solar battery is disposed along a peripheral edge of the display member (Matsumoto figure 35 element 2 is near the edge of the glass).

***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathez (US 5243578) in view of Ishikawa (US 6355873).

With respect to claim 1, Mathez teaches a time counting apparatus (Mathez figure 2 elements 1-33) comprising:

a casing (Mathez figure 2 elements 1-9):  
a digital face provided in the casing (Mathez figure 2 element 10);  
a time counting module provided in the casing (Mathez figure 2 element 13); and  
a semiconductor element mounted on the digital face for supplying driving power to the time counting module (Mathez figure 2 element 21, note, photovoltaic cells are commonly made of semiconductors).

Mathez does not expressly disclose the semiconductor element is bulb-shaped.

Ishikawa discloses a photovoltaic cell (Ishikawa figure 6 elements 7a-240) with a bulb-shaped semiconductor (Ishikawa figure 6 element 50, see column 3 lines 14-16).

Mathez and Ishikawa are analogous arts because Mathez utilizes a photovoltaic device and Ishikawa teaches an improved photovoltaic device.

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At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the teachings of Ishikawa to modify the watch in Mathez to include a bulb-shaped photovoltaic device.

The motivation for doing so would be to utilize a highly efficient and inexpensive solar cell device (Ishikawa column 2 lines 13-17).

Therefore, it would have been obvious to combine Ishikawa with Mathez for the benefit of utilizing an efficient and inexpensive solar cell device to obtain the invention as specified in claim 1.

With respect to claim 2, Mathez in view of Ishikawa teaches the time counting apparatus according to claim 1 (see rejection of claim 1 above), wherein the digital face has a hour indicating section on its surface (Mathez figure 1 element 10, the outer annulus of the dial is taken as the hour indicating section); and the bulb-shaped semiconductor element disposed on the hour indicating section on the digital face (Mathez figure 1 element 21).

With respect to claim 3, Mathez in view of Ishikawa teaches the time counting apparatus according to claim 2 (see rejection of claim 2 above), further comprising:  
a box-like member provided in the digital face (Mathez figure 2 element 20, note the photovoltaic cell fits into this indentation), the box-like member having a light reflection layer on its inner surface (Ishikawa figure 6 element 222, this photovoltaic cell is to be fitted into the indentation of Mathez figure 2 element 20);  
and wherein the box-like member receives the bulb-shaped semiconductor element (Mathez figure 2 element 20).

3. Claims 1, 4, 7-8, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (US 4553851) in view of Ishikawa (US 6355873).

With respect to claim 1, Matsumoto teaches a time counting apparatus (Matsumoto figure 3 elements 2-35) comprising:

a casing (Matsumoto figure 12 elements 13, 10):  
a digital face provided in the casing (Matsumoto figure 14 elements 10, 10A);  
a time counting module provided in the casing (Matsumoto figure 14 element 20); and  
a semiconductor element mounted on the digital face for supplying driving power to the time counting module (Matsumoto figure 12 element 2, note, photovoltaic cells are commonly made of semiconductors).

Matsumoto does not expressly disclose the semiconductor element is bulb-shaped.

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Ishikawa discloses a photovoltaic cell (Ishikawa figure 6 elements 7a-240) with a bulb-shaped semiconductor (Ishikawa figure 6 element 50, see column 3 lines 14-16).

Matsumoto and Ishikawa are analogous arts because Matsumoto utilizes a photovoltaic device and Ishikawa teaches an improved photovoltaic device.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the teachings of Ishikawa to modify the watch in Matsumoto to include a bulb-shaped photovoltaic device.

The motivation for doing so would be to utilize a highly efficient and inexpensive solar cell device (Ishikawa column 2 lines 13-17).

Therefore, it would have been obvious to combine Ishikawa with Matsumoto for the benefit of utilizing an efficient and inexpensive solar cell device to obtain the invention as specified in claim 1.

With respect to claim 4, Matsumoto in view of Ishikawa teaches the time counting apparatus according to claim 1, further comprising:

a corner member (Matsumoto figure 12 elements 37, 30, 34, 36, and 38) fixed to the casing so as to cover a peripheral portion of the digital face (Matsumoto figure 12 element 30, note element 30 is angled and covers part of the face (element 11), in addition, column 7 lines 55-62 state the base plate can be used as the face); and

wherein the bulb-shaped semiconductor element is disposed between a top surface of the digital face and the corner member (Matsumoto figure 12 element 2, element 2 is above element 10 and to the left of element 30).

With respect to claim 7, Matsumoto in view of Ishikawa teaches the time counting apparatus according to claim 1 (see rejection of claim 1 above), wherein the casing has a bezel portion (Matsumoto figure 4 element 15), the bezel portion being formed with a groove for receiving the bulb-shaped semiconductor element.

With respect to claim 8, Matsumoto in view of Ishikawa teaches the time counting apparatus according to claim 7 (see rejection of claim 7 above), wherein the groove of the bezel portion is provided on its surface with a light reflection layer (In the combined embodiment, Ishikawa figure 6 element 222 lines the wall adjacent to the photovoltaic cells and provides this reflective layer).

With respect to claim 16, Matsumoto teaches the electronic apparatus according to claim 12 (see rejection of claim 12 above), wherein the solar battery comprises plural solar battery elements (Matsumoto figure 14 element 2), which are disposed along

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the peripheral edge of the protection glass (Matsumoto figure 14 element 2 is positioned near the peripheral edge of the protection glass).

Matsumoto does not expressly disclose the semiconductor element is bulb-shaped.

Ishikawa discloses a photovoltaic cell (Ishikawa figure 6 elements 7a-240) with a bulb-shaped semiconductor (Ishikawa figure 6 element 50, see column 3 lines 14-16).

Matsumoto and Ishikawa are analogous arts because Matsumoto utilizes a photovoltaic device and Ishikawa teaches an improved photovoltaic device.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the teachings of Ishikawa to modify the watch in Matsumoto to include a bulb-shaped photovoltaic device.

The motivation for doing so would be to utilize a highly efficient and inexpensive solar cell device (Ishikawa column 2 lines 13-17).

Therefore, it would have been obvious to combine Ishikawa with Matsumoto for the benefit of utilizing an efficient and inexpensive solar cell device to obtain the invention as specified in claim 16.

4. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (US 4553851) in view of Ishikawa (US 6355873) in view of Miyoshi (US 6372977).

With respect to claim 5, Matsumoto in view of Ishikawa teaches the time counting apparatus according to claim 4 (see rejection of claim 4 above), wherein a light reflection layer is provided on at least a bottom surface of the corner member (Matsumoto figure 12 element 38) and an inner surface of the casing (Ishikawa figure 6 element 222, the base of the photovoltaic cell is reflective and may be considered part of the casing).

Matsumoto does not expressly disclose a reflection layer on one surface of the top surface of the digital face.

Miyoshi discloses a watch (Miyoshi figure 2 elements 1-22) with solar cells (Miyoshi figure 1 element 6) and a reflective face (Miyoshi figure 1 elements 1-2) used to reflect light toward the solar cells.

Mathez, Miyoshi and Ishikawa are analogous arts because both Mathez and Miyoshi utilize a photovoltaic device and Ishikawa teaches an improved photovoltaic device.



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At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the teachings of Miyoshi to modify the watch in Mathez in view of Ishikawa to include a light reflective watch face.

The motivation for doing so would be maximize the opto-electromotive force in the solar battery (Miyoshi column 5 lines 66-67).

Therefore, it would have been obvious to combine Miyoshi with Mathez in view of Ishikawa for the benefit of generating a higher opto-electromotive force in the photovoltaic cells device to obtain the invention as specified in claim 5.

With respect to claim 6, Matsumoto (US 4553851) in view of Ishikawa (US 6355873) in view of Miyoshi teaches the time counting apparatus according to claim 5 (see rejection of claim 5 above), wherein the corner member is made of a semi transparent member (Miyoshi figure 12 element 30, note the figure shows light passing through element 30).

5. Claims 1,9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 6021099) in view of Ishikawa (US 6355873).

With respect to claim 1, Aoki teaches a time counting apparatus (Matsumoto figure 3 elements 2-35) comprising:

a casing (Aoki figure 2(a) elements 1-16):

a digital face provided in the casing (Aoki figure 2 element 10);

a time counting module provided in the casing (Aoki figure 2 element 16);

and

a semiconductor element mounted on the digital face for supplying driving power to the time counting module (Aoki figure 2 element 11).

Aoki does not expressly disclose the semiconductor element is bulb-shaped.

Ishikawa discloses a photovoltaic cell (Ishikawa figure 6 elements 7a-240) with a bulb-shaped semiconductor (Ishikawa figure 6 element 50, see column 3 lines 14-16).

Aoki and Ishikawa are analogous arts because Aoki utilizes a photovoltaic device and Ishikawa teaches an improved photovoltaic device.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the teachings of Ishikawa to modify the watch in Aoki to include a bulb-shaped photovoltaic device.

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The motivation for doing so would be to utilize a highly efficient and inexpensive solar cell device (Ishikawa column 2 lines 13-17).

Therefore, it would have been obvious to combine Ishikawa with Aoki for the benefit of utilizing an efficient and inexpensive solar cell device to obtain the invention as specified in claim 1.

With respect to claim 9, Aoki in view of Ishikawa teaches the time counting apparatus according to claim 1 (see rejection of claim 1 above), further comprising:

- a supporting member fixed to the casing at the rear side of the digital face (Aoki figure 2(a) element 17 with Ishikawa figure 6 elements 222, 224, 228, 240, 210); and

- wherein the digital face is a light transmittance nature (Aoki figure 2 element 10 in light of column 4 lines 15-20) ; and

- the bulb-shaped semiconductor is disposed between the digital face and the supporting member (See Aoki figure 6).

With respect to claim 10, Aoki in view of Ishikawa teaches the time counting apparatus according to claim 9 (see rejection of claim 9 above), wherein the supporting member is subjected to a light reflection process (Aoki figure 6 elements 222, 224).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 6021099) in view of Ishikawa (US 6355873) in view of Amano (US 6430112).

With respect to claim 11, Aoki in view of Ishikawa teaches the time counting apparatus according to claim 10 (see rejection of claim 10 above), wherein the supporting member is made of a semi light-transmittance (Aoki figure 6 element 228, this aperture will allow light to pass) and light-reflection material (Aoki figure 6 element 222).

Aoki in view of Ishikawa does not expressly disclose an electro-luminescence element provided on a rear surface of the supporting member, the electro-luminescence element being made activate under an electro-magnetic field caused by a current for driving the time counting module.

Amano discloses a watch with an electro-luminescence element (Amano figure 1 element 2) provided on a rear surface of the supporting member (In combination with Aoki the supporting member is Aoki figure 2(a) element 17), the electro-luminescence element being made activate under an electro-magnetic field caused by a current for driving the time counting module (Amano column 3 lines 50-61).

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Aoki and Ishikawa are analogous arts because Aoki utilizes a photovoltaic device and Ishikawa teaches an improved photovoltaic device.

Aoki and Amano are analogous arts because they both teach improvements in watches.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the teachings of Amano to modify the watch in Aoki in view of Aoki to include an electro-luminescence panel.

The motivation for doing so would be indicate "Ayurveda time" (Amano column 1 lines 15-58).

Therefore, it would have been obvious to combine Amano with Aoki in view of Ishikawa for the benefit of indicating Ayurveda time to obtain the invention as specified in claim 11.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakata (US 6294822) discloses a spherically shaped photovoltaic cell.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Kolo whose telephone number is (571) 272-7953.

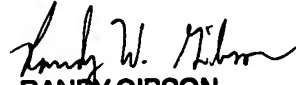
The examiner can normally be reached on M-R 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on (517) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bak

  
RANDY GIBSON  
PRIMARY EXAMINER